

## REMARKS

Reconsideration of the first Office action and allowance of the present application are respectfully requested in view of the foregoing amendments and the following remarks.

With respect to substantive matters, applicant notes that claims 1, 3 and 6-10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sumiya et al. (5,638,206). The examiner states that Sumiya et al. discloses an optical apparatus which includes a microscope 500, a device for moving a sample from a storage to a stage for viewing and a mechanism for moving the stage supporting the sample in three directions. The examiner refers to a carrier 32Y movable in a Y-axis direction, a carrier 32X movable in an X-axis direction, a device 32Z0 disposed between the X-Y carrier assembly and the stage carrier 310 for moving the carrier stage in a Z-axis direction. Concerning the method as recited in claims 7-10, the examiner states that the steps as recited therein are readable in the descriptions as provided in column 14 of Sumiya et al. which discloses operations of the X-axis and Y-axis carriers for positioning the sample to the microscope in the operation of the Z-axis device for the purpose of focusing.

The examiner has also rejected claims 1-10 under 35 U.S.C. § 103(a) as being unpatentable over Kubo et al. (5,280,677) in view of Sumiya et al. The examiner states that Kubo et al. discloses a positioning device for positioning a sample which comprises a X-Y assembly 9, a movable carrier 1 supporting a sample and a mechanism comprising three spaced-apart piezoelectric actuators for moving the movable member 1 in a Z-axis direction. The examiner notes that the only feature missing from the Kubo et al. device is that it is not clearly stated that the positioning device can be used in a

microscope. Nevertheless, the examiner states that the use of a positioning device having an X-Y assembly, a member movable in the Z-axis direction and the mechanism disposed between the X-Y assembly and the movable member for moving the movable member in a Z-axis direction can be seen in the microscope system of Sumiya et al. The examiner then concludes that it would have been obvious to one of skill in the art to utilize the positioning device as provided by Kubo et al. in a microscope system as suggested by Sumiya et al. for the purpose of viewing the sample via a microscope. The rejections are respectfully traversed.

### **The Claims are Neither Anticipated Nor Obvious**

The examiner has not explained how the microscope system of Sumiya et al. could be modified by Kubo et al., and still provide an operative device. Moreover, it is not seen that there is any suggestion in the art of record for a reason to make the combination. Furthermore, it is believed that Kubo et al. is non-analogous art because it is not directed to focusing of a microscope at all. Each of these points will now be discussed, and why applicant's claims, as amended, patentably distinguish over any of the references of record, taken either singly or in combination.

The claims in the present application have been amended, for example, claim 1 has been amended to recite, in the last paragraph thereof, that there is provided:

**a piezoelectric actuator mechanism interposed between the XY plate assembly and the Z-axis plate operable for rectilinear translation of the Z-axis plate, wherein the X-axis, Y-axis, and Z-axis plates each includes an internal opening configured to allow passage of transmitted light and viewing of the sample by an objective lens of the optical microscope.**

Similarly, claim 7, which recites a method according to the present invention, has been amended as well. The specific structural limitations of claim 1, and in the method

of claim 7 will now be discussed, and applicant will show why these limitations are not disclosed or suggested in the prior art of record.

Neither Sumiya et al. nor Kubo et al. disclose any type of structure in which the X-axis, Y-axis and Z-axis plates each includes an internal opening configured to allow viewing of a sample by an objective lens and passage of transmitted light. Nor is there any suggestion or disclosure to modify either reference to provide such internal openings. Certainly, to provide such openings in Sumiya et al. would not be possible because the basic structure and operating characteristics of Sumiya et al. would not be retained. This is because Sumiya et al. includes a length measuring device in which light is reflected from the carrier stage.

As can be seen in Fig. 1 of Sumiya et al., an optical microscope 500 is disposed above a carrier stage 310, but directly beneath that stage is a turning device 32R for rotating the carrier stage 310 around axis Z. The turning device is mounted upon moving device 32X which in turn is mounted on moving device 32Y. As is clear from Fig. 1 and the description in Sumiya et al., there is no passage of light through the carrier stage, nor through the moving device 32X, 32Y, and 32Z stages. Nor would there be any reason to provide such openings; if such openings were provided, the turning device 32R would have to be removed because it is directly interposed between moving device 32X and the carrier stage. There simply is no reason to provide openings in any of the plates in the structure disclosed by Sumiya et al., nor for that matter, in the structure disclosed by Kubo et al.

Turning to Kubo et al., one notes that the examiner has already recognized that the positioning mechanism disclosed therein is unrelated to optical microscopy. Kubo et

al. is directed to semiconductor manufacturing, and in particular to a device for reproducing fine patterns on a semiconductor wafer in a lithographic process and for positioning an article quickly and precisely. Kubo et al. notes that a problem exists in the time necessary to position semiconductor wafers because of vibration caused by acceleration at the start or stop of movement of the X-Y stage (see column 1, lines 28-40). Therefore, Kubo et al. seeks to provide a positioning mechanism which positions an article in a Z-axis direction to a predetermined target plane and/or in a tilt direction inclined with respect to the target plane. Kubo et al. is not directed to a focusing system and requires a large flat plate, such as indicated at 10 to support an X-Y stage 9. The system is designed to eliminate vibrations, and that is why leaf springs are disposed at the opposite sides of sensor holders 5a, 5b and 5c; these leaf spring sets are shown at 8a-8c, which means that movable member 1 is resiliently supported by these leaf springs.

From the above, it can be seen that Sumiya et al. does not anticipate applicant's claims, nor would applicant's claims be rendered obvious by combining the positioning device of Kubo et al. and the microscope system as suggested by Sumiya et al. It is difficult to see how such a combination could even be made, nor why there would be any reason to combine the two references. Significantly, it is submitted that Kubo et al. is not a proper reference to even be combined with Sumiya et al.

#### **Kubo et al. is Nonanalogous Art**

In the case of *In re Clay*, 966 F.2d 656, 23 USPQ2d 1058 (Fed. Cir. 1992) the Federal Circuit provided a test to determine whether a reference in the prior art is "analogous" or not:

Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.

Kubo et al. is not from the same field of endeavor and is not reasonably pertinent to the particular problem at hand, as can be seen when the above criteria are applied to the facts in the present case. First of all, Kubo et al. is directed to a positioning device, and has nothing to do with microscopes or positioning a sample for investigation. Nor is Kubo et al. reasonably pertinent to the particular problem with which the invention of the present application is involved. Because Kubo et al. is directed to a positioning device used in semiconductor measurement. The particular problem in Kubo et al., measuring fine patterns and preventing vibration in a positioning mechanism, is not related to the same problem of focusing an image, during use of a microscope. Kubo et al. is simply not in the same field of endeavor as applicant's invention nor reasonably pertinent to the particular problem with which the present invention is involved.

When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine those references. The evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or in some cases, from the nature of the problem to be solved, although "the suggestion more often comes from the teachings of the pertinent references," *In re Rouffet*, 149 F.3d at 1355, 47 USPQ2d at 1456 (Fed. Cir. 1998). The showing must be clear and particular, and as held by the Federal Circuit in *Rouffet*, 149 F.3d at 1352:

To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a

motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.

Applying the above test to the claims at issue, applicant submits that a skilled artisan, confronted with the problems inherent in the Sumiya et al. patent concerning accurate positioning in the Z-axis direction, would not select elements from Kubo et al. Kubo et al. is directed to a positioning device and the combination of combining Kubo et al. would not provide the elements present in applicant's claims in any event.

The prior art of record in the present application neither anticipates nor renders obvious applicant's invention, as set forth in the claims now present in the case. Accordingly, it is respectfully requested that a Notice of Allowance be issued forthwith.

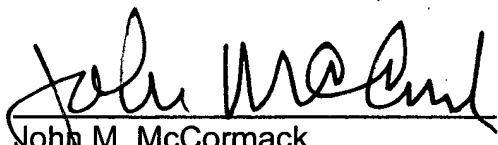
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